CLAIMS

1. A device (100, 400, 600) for multiplying the pulse frequency of a signal in the form of a pulse train, the device comprising input means (110, 410, 610) for the signal and a plurality of access means for accessing the signal at points with a predetermined phase difference between said points, the device additionally comprising a plurality of means (A, B, C ,D; A', ,B', C', D'; A'', B'', C'', D'') at a first level for combining accessed signal pairs, there being one and the same phase distance within all the combined pairs, the output from each first level combining means being a new pulse train, the device additionally comprising combining means (E,E',E'') at a second level for combing the pulse trains from the first level into one single pulse train, characterised in that the combining means at the first level are such that the pulses in their output pulse trains have rise flanks which always coincide with the rise flank of the first signal in the combined accessed signal pairs, and fall flanks which always coincide with the fall flanks of the second signal in said pair.

2. The device of claim 1, in which the phase distance within the combined pairs is calculated according to the formula (360/[2*N]) + 180, where N is the desired multiplication factor, N being any digit greater than 1.

3. The device of claim 2, additionally comprising switching means connected to the input of one or several of the combining means at the first level, using which switching means the input to said combining means can be switched to provide the combining means with another phase distance within the combined signal pair according to the formula (360/[2*N]) + 180, where N is the desired multiplication factor, N being any digit greater than 1.

4. The device of claim 3, in which the switches can also be used to disconnect the input signals to one or more of the first level combining means.

5. The device of any of the previous claims, in which the combining means at the first level comprise logic circuits with an AND-function.

6. The device of any of the previous claims, in which the combining means at the second level comprise logic circuits with an OR-function.

7. The device of any of the previous claims, additionally comprising flip-flops between the output of the first level combining means and the inputs of the second level combining means, in order to avoid having multiple pulses, coming from the combining means at the first level during the two periods of the input signal.

8. A method for multiplying the pulse frequency of a signal in the form of a pulse train comprising the step of accessing the signal at a plurality of points with a predetermined phase difference between said points, and first level combining of the signal pairwise (A, B, C ,D; A', ,B', C', D'; A", B", C", D") from said accessed signal points so that there is one and the same phase distance within all the combined pairs, the output from each first level combination being a new pulse train, the method additionally comprising the combining at a second level (E, E', E") of the pulse trains from the first level into one single pulse train, characterised in that the combining at the first level is carried out in such a manner that the pulses in the output pulse trains at the first level have rise flanks which always coincide with the rise flank of the first signal in the combined accessed signal pairs, and fall flanks which always coincide with the fall flanks of the second signal in said pair.

9. The method of claim 8, by means of which the phase distance within the combined pairs is calculated according to the formula (360/[2*N]) + 180, where N is the desired multiplication factor, N being any digit greater than 1.

10. The method of claim 9, additionally comprising the ability to alternate the phase distance between the signals used in one or several of the combinations at the first level, with the phase distance within the combined signal pairs remaining according to the formula (360/[2*N]) + 180, where N is the desired multiplication factor, N being any digit greater than 1.

11. The method of claim 10, by means of which alternating it is also possible to disconnect the at least one of the input signals to one or more of the first level combining means.

12. The method of any of claims 8-11, according to which combining at the first level comprises logic operations with an AND-function.

13. The method of any of claims 8-12, according to which the combining at the second level comprises logic operations with an OR-function.

14. The method of any of claims 8-13, additionally comprising the use of flip-flops between the output of the first level combining means and the inputs of the second level combining means, in order to avoid having multiple pulses, coming from the combining means at the first level during the two periods of the input signal.